

## THE BATTLE AGAINST COVID-19 PANDEMIC

### 400 COVID POSITIVE CASES TREATED IN DIVISIONAL RAILWAY HOSPITAL , EASTERN RAILWAY, HOWRAH



**Divisional Railway Hospital, Howrah**

The Divisional Hospital, Howrah was marked as a **Covid Hospital** along with 73 other Railway Hospitals in various zones following a VC by the CRB, Rly Bd on 6/3/2020.

**As on date ( 10/9/2020), this hospital has admitted and treated more than 400 Covid- Positive patients.**

During the Corona virus Pandemic Lockdown, the Medical department of Howrah Division, Eastern Railway ably supported by the DRM and other Departments of Howrah Division, has come forward in providing medical help, readying the hospital to be equipped to face the challenges of the COVID-19. Till date ( 10/9/2020) a **total of 516 patients have been admitted in this hospital. out of**

**which, 396 cases have been treated successfully and discharged after recovery** and many more are on way to recovery.

The dedicated team of Health Care Workers can be looked upon as the brave **corona warriors** at the frontline, with great support from the administrative heads.

Patients are admitted through the triage area with proper history and counseling for both patients and relatives.

Preparedness was organized by the Medical team led by CMS/HWH, ably supported by DRM/HWH and his team.

#### **Preparedness:**

**Preparedness** was started in March 2020, during the initial threat of the Pandemic.

1. **A preparatory meeting** was held in DRH with senior doctors, ANO, and AHO
2. HCW were made aware of **Personal Protection and simple precautions**. Also brief outline of the Covid 19 infection was given.
3. Multiple training sessions have been conducted throughout the month to prepare the Health Care Workers to face up to the challenge of COVID-19 Pandemic
4. The **central AC of wards was switched off** to prevent potential infection spread and substituted with Exhaust and Pedestal Fans
5. **Adequate sanitization and disinfection** of medical equipments and various areas of the Hospital was done on regular basis.

6. **Awareness drives** for patients, relatives and other railway beneficiaries were organized.
7. **Leaflets and posters** were distributed to Health Units. Awareness posters, Dos and Don'ts were displayed at prominent places in the DRH
8. **Existing Patients were discharged** or referred to BRSH, Sealdah /Desun Hospital so that the Hospital could admit only Covid suspects or Covid positive patients.
9. General patients with non-Covid illnesses were given consultation in **DRM Health Unit** and others were referred to **BRSH,Sealdah** and recently to **Workshop Hospital,LLH**.
10. **Aarogya Setu app** to fight against Covid -19 downloaded and made compulsory



Poster being displayed in Azimganj Health Unit



Training of HA and Ayah on Covid 19



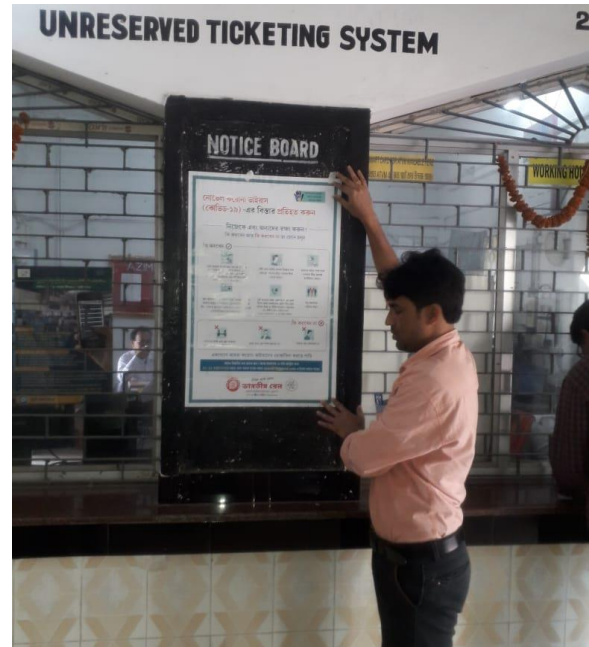
Training by ACMS/Physician to HCW on Isolation Ward Management



In-house Preparation of Hand Sanitizer at QC Lab, DRH/HWH



**Nodal Officer, Dr.A.K.Singh addressing a Covid-19 awareness program**



**Azimganj Station**

## **Awareness Programmes for Non-medical Railway Employees**

Sessions have been organized for selected representatives nominated by various departments and Awareness sessions held at respective venues.

The number of participants was limited to ensure adherence to Social Distancing Protocol. Where the staff exceeded the venue capacity, 2 consecutive sessions were held so that all the interested participants could attend without violating the need to maintain prescribed distance between attendees.



**Portable X-Ray Machine being placed in the Isolation Ward**



**Awareness at EMU Car-shed, Howrah**



**Awareness at PBRC Hall, DRM Building,  
Howrah**



**Awareness at CDO/Complex, Tikiapara**

**Corona Virus Control-room was also established:**

**Nodal Officers:**

**Eastern Railway Zonal:** Dr. A Seth, ACMD/TA,  
Ph: 9002020504,

**Howrah Division (Railway):** Dr. A.K.Singh Ph:  
9002022515

**Howrah (State)** Dr. Das CMOH (State Nodal Officer) and Dr. A. K. Ghosh Dy CMOH (State Nodal Officer)

There was active participation at a Video Conference with online training in ventilator management of Covid patients by MoHFW on 30/3/2020 through Zoom.



**Zoom Conference on Use of Ventilators  
organized by MoHFW**

As per guidelines of Railway Board, a 7 bedded Isolation Ward with Portable X-Ray Machine, Oxygen Cylinders and Oxygen Concentrators, Suction Machines, etc was kept in readiness.



**Isolation Wards equipped with Portable X-Ray  
Machines, Oxygen Cylinders and Oxygen  
Concentrators**

Special **Fever Clinic** was started in the DRH at HWH.



Health Care Workers on duty

## Training of Health Care Workers

A total of **23 Staff trainings** were held on Covid pandemic. Training was imparted by Medical Officers and included **Covid Awareness, Safety Precautions, Disinfection, use of PPE kits** and other related topics.

**Online webinars from MoHFW** were also included.

## HCW:

Health Care Workers (HCW) are the fore front warriors in the battle against the Covid Pandemic. Adequate man power planning, training and duty roster was prepared for efficient service.



Health Care Workers in the Hospital



**Anesthetist explaining the uses of various medical gadgets and instruments**

## Medical Gadgets:

DRH, HWH was a dedicated Orthopedic Hospital..Stock of existing essential medical equipments was increased where existing stock was found to be insufficient to cope up with the possible predicted high number of admissions . Newer gadgets for better management of Covid patients were procured.

**It was ensured that the following equipments were in sufficient numbers to treat Covid patients:**

| Equipment                  | Existing Stock |
|----------------------------|----------------|
| B-Type Oxygen Cylinders    | 205            |
| D-Type Jumbo O2 Cylinders  | 53             |
| Oxygen Concentrators       | 24             |
| Finger-tip Pulse Oximeters | 75             |
| Venturi Masks              | 20             |
| Non Rebreathable Masks     | 100            |
| Saline Stands              | 200            |
| Multiparameter Monitors    | 36             |
| ABG Machines               | 4              |
| Syringe Infusion Pumps     | 50             |
| Infrared Thermal Scanners  | 20             |
| Defibrillators             | 8              |
| Portable X-Ray Machines    | 3              |
| Suction Machine            | 42             |
|                            |                |

### Special mention:

**Covid Wisk for** collecting samples from patients using a transparent protective barrier and gloves.

**Remote controlled Trolleys with camera**

**Venturi Masks and Non-Rebreathable Masks for higher Oxygen delivery**

**Integrated Heated and Humidified High Nasal Oxygen System, that will be capable of**

delivering oxygen at 40-60 L/min.



Cardiac Defibrillator kept in readiness to manage patients with ECG abnormalities ( QTc Prolongation) and myocarditis



Oxygen Cylinders ready for refilling



High Flow Nasal Oxygen Machine, AIRVO2 assembled with attachments and ready to use



ABG (Arterial Blood Gas Analyzer Machine) in use by Doctor during morning rounds

## **PPE Kits:**

Sincere thanks to the Administrative Heads, particularly DRM/HWH that this Division could procure one of the best PPE Sets available in the market as per guidelines of SITRA approval and approval by the Ministry of Textiles and MoHFW.

HCW at DRH HWH are using an 8 item PPE Kit consisting of:

Coverall, Bouffant Cap, Inner Latex gloves, Outer Nitrile Gloves, N95 Masks, Shoe Covers, Face Shields and Bio-hazard Bag

Apart from PPE Kit Sets, N95, 3-Layer Masks, Disposable Face Shields, Hood, Shoe Covers, Viral Barrier Gowns are used as when necessary following ICMR Guidelines.



**Testing of PPE Kits by Doctor**



**Inspection of PPE Kit Samples by Senior Medical Officer**



**PPE Stock is meticulously supervised and adequately replenished. CMS/HWH inspecting PPE stock with his team**

### DONNING SEQUENCE AND DOFFING SEQUENCE FOR PPE

| Donning sequence       | Doffing sequence       |
|------------------------|------------------------|
| Hand wash              | Outer gloves           |
| ↓                      | ↓                      |
| Cap                    | Hood                   |
| ↓                      | ↓                      |
| Shoe cover             | Coverall/ Gown         |
| ↓                      | ↓                      |
| Hand rub               | Shoe cover             |
| ↓                      | ↓                      |
| Inner glove            | Hand rub (gloved hand) |
| ↓                      | ↓                      |
| Coverall/ Gown         | Goggles                |
| ↓                      | ↓                      |
| Mask (surgical or N95) | Mask (surgical or N95) |
| ↓                      | ↓                      |
| Goggles                | Cap                    |
| ↓                      | ↓                      |
| Hood                   | Inner glove            |
| ↓                      | ↓                      |
| Outer gloves           | Hand wash              |

\*Before donning- remove all external wearing such as watches, jewellery, ear rings, bangles, pen, ID card etc

\*\*Mask should be removed only outside patient room

## Accommodation of HCW:

Arrangement of accommodation of 90 HCW has been done initially at Officers Rest House at Howrah Station complex, two Blocks of vacant Staff quarters at Telkalghat, Howrah and also at Archive Building and Golmohor Stadium complex. These units have been furnished and provision for UV and RO Water dispensers made

Food arrangements have been made for Health Care Staff and doctors.

## Hospital Set-up:

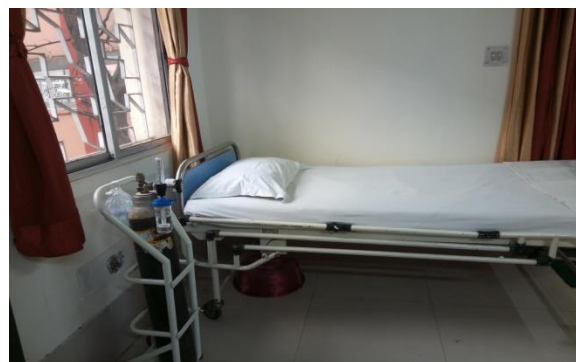
2 Wards (Male and Female) for Covid Suspects, 5 Wards (Male and Female) for Covid

Positives Patients are functioning. Cabins are also being utilized.

3-bedded ICU is kept ready. 1 more ward is kept ready for operation for patients if needed.



**3 Bedded Medical Intensive Care Unit**



**Cabins kept ready with Oxygen and Monitors**

**UV and RO water dispensers** have been arranged for staff and patients.

**Kitchen:** Delivery of nutritious cooked food arrangement have been made for patients thrice a day from the Hospital kitchen. The food is given to patients in **disposable containers** to maintain proper hygiene.



**Food for Hospital Indoor patients in Disposable Utensils**

|                   |          |
|-------------------|----------|
| Total kCal/day    | 3,400    |
| Protein/day       | 109.5 gm |
| Carbohydrates/day | 584 gm   |



**Wards maintaining adequate bed spacing**

## **Central Medical Gas Pipeline:**

DRH,HWH is at present installing Central Medical Gas Pipeline for **High Dependency Units** ( OT Complex, Intensive Care Units ( both Medical and Surgical) and **General Wardst**though **Works Contract**.



**DRM/HWH inaugurating the Central Gas Pipeline**



**Ward being readied with Central Gas Pipeline**

## Jumbo Oxygen Cylinders:

Each Jumbo Cylinders ( **D-Type**)have a capacity of 46.7 L ( 7 cu.metres)as against 10 L ( 1.4 cu. metres) for the usual Oxygen Cylinders.

53 such Jumbo cylinders have arrived for the Manifold Room for Central Pipeline.



**Manifold for Central Gas pipeline**

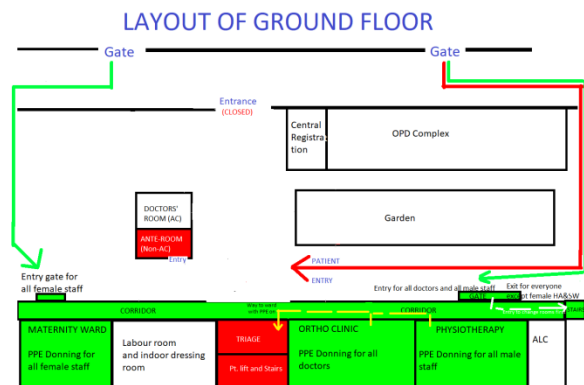
## Distribution of Gas points:

| Unit                                        | Gas                         | Number of Outlet Points              |
|---------------------------------------------|-----------------------------|--------------------------------------|
| <b>OT Complex</b><br>4 OTs<br>Recovery Room | Oxygen<br><br>Nitrous Oxide | 8 (O2), N2O (4), Air (4), Vacuum (8) |
| ICU ( Med)                                  | Air                         | 12 (O2), Air (6), Suction (5)        |
| ICU (Surg)                                  | Suction                     | 10 (O2), Air (5), Suction (6)        |
| M4-5 Ward                                   | Oxygen                      | 10                                   |
| M2-3 Ward                                   | Oxygen                      | 20                                   |
| F1,2-3 Ward                                 | Oxygen                      | 25                                   |
| Cabin s                                     | Oxygen                      | 3                                    |
|                                             |                             |                                      |

For High Dependency Units, most modern technology of “**Full Automated Panels**” will be fitted.

## Red and Green Zones:

Since the Hospital has two separate buildings, **Green and Red Zones have been marked** so that patients are kept in Red Zones with HCW taking full precautions against infection. Green zones that include ANO Office, Medical Store, Donning Area are segregated from Red Zones. All the HCW have been made aware of these Zones and their movements to and from the different zones.





## Test for Covid 19: RT PCR

A total of **350 RT-PCR test samples** have been drawn at DRH HWH and sent to **NICED** for testing. This hospital has indentured 500 VTM Kit with Liquid Media and Swab Sticks, Gel Packs, Thermocol Boxes and Zipper Pouch for VTM Kits, all essential for PCR tests.

## Rapid Antigen Test for Covid-19:

**1000 Rapid Antigen Test Kits for Novel Corona Virus ( SARS-Cov-2/ Covid-19)** that is almost 80 % accurate and can give results within an hour are being procured for use.

Efforts are also on to procure **Rapid Antibody Test Kits for Novel Corona Virus** to detect the prevalence of infected, but asymptomatic or recovered HCW of this Division.

**Naso and Oro-pharyngeal swabs being taken**

## Patient Care:

**Smartphones** has been provided at wards for better management of patients. ECG, X-Rays, lab investigation reports etc. are communicated through smart phones and an opinion from a panel of expert Medical Team is taken, if necessary.

**Consultation** is also done with a panel of specialists Doctors from BRSH along with their physical presence at HWH for better patient management.

Efforts are on to install **video cameras** in each Ward and Cabin Complex for **2-way Communications** with HCW and

patients inside the Wards with a team of Medical Experts.



**Physicians from HWH and BRSH just before Donning and Hospital Rounds**

. **Provision of air conditioning** has been made at specific areas of the wards where feasible. Natural ventilation with large windows on opposite sides are available in the rest of the wards.

HCW that includes Staff Nurses and Doctors are **present round the clock** so that medical attention is prompt.



**Utmost care for the Covid patients with a touch of humanity**



**Nasal Oxygen cannula being fixed**



**Awake prone position for better delivery of oxygen to lungs and improving V/P ratio( Ventilation:Perfusion Ration)**



**Monitoring treatment for Covid Patients**



**Care for Patients admitted**



**Routine Rounds by a team of Doctors**



**Supervising the Lunch**



**Doctor examining a Covid positive patient**



**Adjusting the Monitor Leads following admission**



**Another Male Ward opened due to demand**



**Humanely care for Covid Patients by HCW**



**Recording of Blood Pressure of a sick patient**



**Patient on High Flow Nasal Oxygen**

## Treatment Protocol as per MoHFW guidelines.

It has now been concluded that Covid 19 is predominantly a **viral respiratory disease** with complications seen in 10-20 % cases, especially in patients with existing co morbidities. **Hence treatment is directed at**

- Identification of respiratory infection and its extent
- Use of Paracetamol and Cough Suppressants
- In case of insufficient oxygenation, nasal oxygen is given as per needs, including awake proning.
- Hydroxy Chloroquine and/or Azithromycin.
- Supportive Vitamins and Minerals like Zinc, Vit C, Vit D
- Control and correction of DM, Renal failure, COPD or Cardiac status
- Prophylactic or specific antibiotics if superadded bacterial infection is suspected.
- Anti virals
- Steroids for patients on Oxygen
- Low Molecular weight Heparin

**Oxygen Delivery equipments** are used as per indications and includes **Nasal Oxygen cannula**( Flow rate 1-6 L/min),**Simple Face mask and Venturi Masks** ( Flow rate 6-10 L/min) and **Non-Rebreathable mask** ( Flow rate 10-15 L/min)



**Non-Rebreathable Oxygen Mask in use**

**Procurement for Integrated Heated and Humidified Nasal Oxygen delivery machines** ( Flow rate 40-60L/min) is complete and ready for use.

**Use of Anti-Viral Drugs** like Remdesivir, Flavipiravir along with Tocilizumab, Methyl Prednisolone and LMWH

have started.



**Important Drugs procured for Covid patients**



**On-duty Doctor checking Bed-head Tickets Referrals to Level 3 & 4 Hospitals:**

As of now, the DRH, HWH is functioning as Level 2 Hospital. Covid Suspect patients, when the need arises are referred to Sanjibon Hospital and College, Phuleswar, Uluberia.

Covid Positive patients are referred to ILS Hospital, Howrah, MCH Kolkata and MR Bangur Hospital.

|                                               |   |
|-----------------------------------------------|---|
| Referrals to Covid Level 3 or 4 Hospitals     | 8 |
| Referrals to Non-Covid Level 3 or 4 Hospitals | 7 |

## Sanitization:

At present sanitization is being carried out in the following target areas using **1% Sod. Hypochlorite solution** and other disinfectants, including use of **Mist Sprayers and Fogging Machines**.

**Hospital:** Sanitization done by Staff belonging to ANO sanitizing Red Zones, Contractual Staff sanitizing Green zones and common areas...usually twice/day

**Colonies:** Sanitization done by Staff belonging to Health Inspector..2-3 times/week

**Residences of Covid positive patients:** Sanitization done by Staff belonging to Health Inspector, on detection of a Positive case

**Ambulances:** Sanitization done by ANO Staff



**Sanitization of HCW Accommodation at ORH**



**Sanitization of the DRH, HWH**



**Ambulances are regularly sanitized**



**Segregated wastes in double layered disposal plastic bags**

Bio-Medical Waste Disposal is being carried out as per guidelines of WBPCB with valid authorization and consent to operate. The waste is removed by Pollution Control Board approved Common Bio-Medical Waste Treatment Facility .



**Health Care Staff Accommodation at Telkalghat**

## **Hospital Waste Disposal:**

Special care has to be taken on waste disposal from a covid designated Hospital.

Intimation to **the Sr. Environment Engineer, West Bengal pollution Control Board & M/S GreenTech Environment Management Pvt Ltd** was made on 2/5/2020 following functioning of DRH, HWH as a Covid Hospital



**Wastes from the Wards being transported to the Waste Disposal Vehicles**

All items, including PPE kits, are thoroughly disinfected with 1% Sodium Hypochlorite solution before packing into Disposal Bags. All bags are **double-layered, labeled and directly disposed off** from the Wards to the designated CBWTF Vehicle

## Transport Facilities:

**For HCW:** Four cars provided by Sr.DME/HWH

**For Covid patients:** Two Ambulances for Covid patients on Contractual basis

**For Non-Covid Patients:** 5 Ambulances

All the vehicles are in contract till Oct-Nov 2020.



**Advance Life Support Ambulance**

**Advance Life Support Ambulance** with intensive care facilities have been introduced recently. This Ambulance is to be used for transport of serious patients accompanied by HCW to higher referral centres.

This Ambulance is equipped with Normal Oxygen Cylinder, Jumbo Cylinder, Transport Ventilators, Multipara Monitor, Syringe Infusion pumps, Pulse Oximeters and other life support systems.



**Interior of the ICU Ambulance**

## Cremation of Dead Bodies:



### Dead Covid Victim in a sealed Dead Body bag

Dead bodies are kept in a sealed plastic **Dead-body Bags**. Dead bodies of Covid Positive patients, as well as Covid Suspect patients can be cremated only after following ICMR protocols and protocols laid down by Howrah Municipal Corporation:

1. Death Certificate
2. Letter to Commissioner of Howrah Municipal Corporation in a prescribed format
3. RT-PCR (CoronaTest) Report

The above documents are sent to the **Medical Officer of the Howrah Municipal**

**Corporation**, who, with a nominal charge will arrange for Dead-Body vehicle and cremation at the **Shibpur Burning Ghat**.

**Special Imprestfund** has been created for providing funeral assistance to close relatives of the deceased covid positive or suspect patient.

Non-gazetted staff are also entitled for Funeral Allowance up to **Rs. 10.000/-** from the **Central Staff Benefit Fund**.

## Help Desk

A help desk has been set up beside the Entrance Gate to Div. Rly Hospital where relatives of patients are provided with **information related to the patients admitted**. Patients without Covid like symptoms who have reported to the hospital unknowingly are **directed to other Health units and Hospitals or treatment**.

**Guidelines for Home Quarantine also to be provided soon.**



## Medical Assistance at HWH Station:

For Howrah Station: **One Ambulance** is kept ready (Contract valid till July 2020)

**HCW including Medical Officers** are a part of the team to screen all passengers reaching HWH Station by the Shramick Special Trains. Also, HCW do their part screening passengers leaving HWH Station by special Trains to other parts of the country.

Medical services are still continuing round the clock.



**Medical Booth at Old Complex, Howrah Stn**



**Screening of Passengers at Howrah Station**



**Use of Non-Contact Thermal Scanners**

## **Statistics: (as on 10/9/2020)**

|                                                          |             |
|----------------------------------------------------------|-------------|
| <b>Total Patients Admitted</b>                           | <b>516</b>  |
| <b>Number of Positive Cases</b>                          | <b>399</b>  |
| <b>Positive cases with Co-morbidities</b>                | <b>219</b>  |
| <b>Total Suspects found Negative</b>                     | <b>96</b>   |
| <b>Positive cases discharged after Recovery</b>          | <b>343</b>  |
| <b>Total Cases discharged after recovery</b>             | <b>256</b>  |
| <b>Referrals to Other Hospitals for better treatment</b> | <b>15</b>   |
| <b>Total Deaths in DRH, HWH</b>                          | <b>13</b>   |
| <b>Total Deaths in Referral Hospitals</b>                | <b>10</b>   |
| <b>Death of Only Positive Patients</b>                   | <b>23</b>   |
| <b>Percentage of Covid Positive Deaths</b>               | <b>6.47</b> |

## **Bio-safety Cabinet**

A Bio-safety cabinet is an isolated ,enclosed and ventilated **laboratory workplace** that can be used for working with highly infective material, like Covid viral swabs and samples , yet not contaminating the immediate surroundings. It includes UV Light, Arm rests and Stands.It protects the laboratory worker and the surroundings from contamination with pathogens ( virus and bacteria).

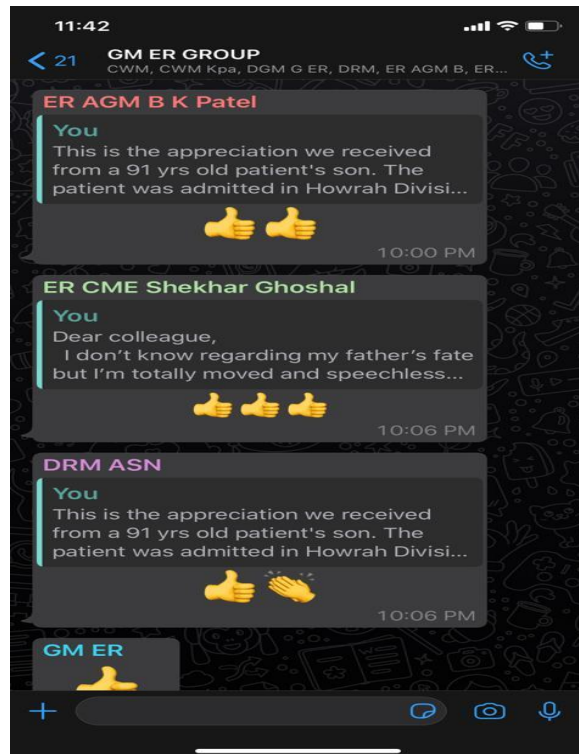
Efforts are being made to procure this item for safe work with viral swabs during in-house testing.



**Biosafety Cabinets**

## Comments from Well Wishers:

DRH, HWH staff have been receiving some really good reviews for their unswerving hard work and dedication through their service. Some of these reviews are as follows:



Accolades from GM E Rly

## Comments of Dr. GP Das . S/o Mr .Manatosh Kumar Das.

Dear colleague,

I don't know regarding my father's fate but I'm totally moved and speechless to see your comradeship & commitment ... the way you kept us updated with necessary help & cooperation

.. Sincere thanks from my family. I'll cherish this kind gesture forever.

Please don't forget to convey my fond regards to Dr . AKSingh , Dr. Giri , Dr. Amitava Dr .Chattaraj & others along with the devoted team of sisters and

group D staffs. Please keep it up 🙌



God bless you .

**Dr. GP Das .**

**S/o Mr .Manatosh Kumar Das.**

**Myself Nandita Chattopadhyay, Ch. Staff and Welfare Inspector, under PCPO,** Eastern Railway, Headquarter, got admitted to Howrah Orthopaedic hospital having been found COVID positive on [19.06.2020](#). My husband Sri Sankar Dey, Sr. Clerk, under PCMM/E.Rly HQ also got admitted at Howrah Orthopaedic hospital having been found COVID positive on 17.06.2020. We are ok now and very much satisfied with the behavior as well as treatment extending to us by the Doctors and nurses and supporting staff. The whole wards(male and female) are being cleaned off and on. Doctors and Nurses are extending very careful support to all the patients. Thank you all for your kind caring towards covid patients.

**Comments from MrAshokeGhosh,  
Employee, Comm. Supervisor, CPAE.**

Fri 12:48PM

Mr Ghosh if possible kindly give  
a review of your treatment at our  
hospital, feedback is needed to  
improve our work  
Thanks & Regards .  
Dr.N Ladha.  
HWH

Delivered

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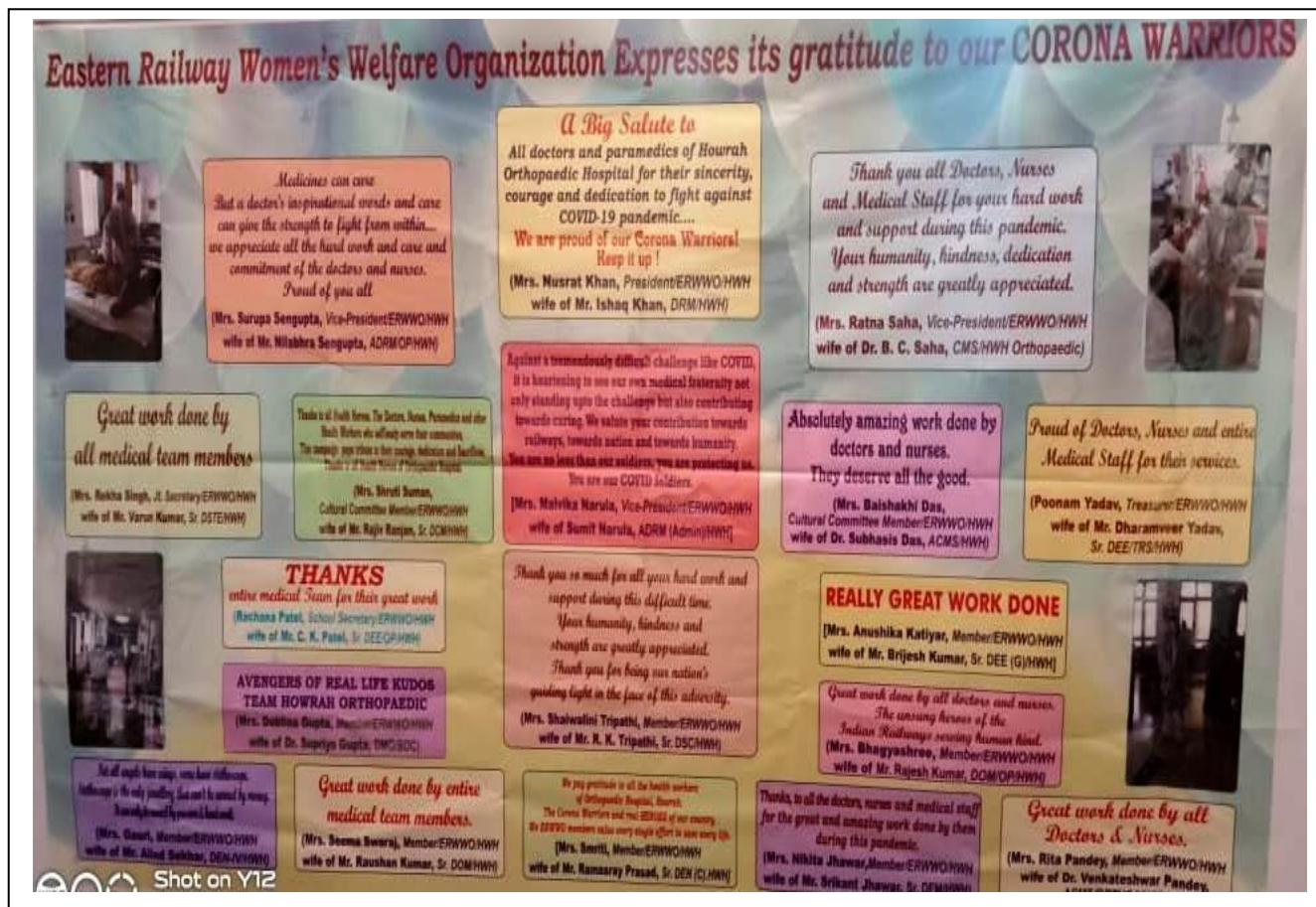
10:35 AM

I am happy with the treatment  
and the service. The doctor  
-patient interaction was very  
good. Twice in the day doctors  
came to check. I did not face any  
problems there.  
The hospital provided good food  
and a very clean and sanitized  
atmosphere.

1

10:54 AM

**ERWWO ( Eastern Railway Women's Welfare Org., Howrah) expressed GRATITUDE towards the Covid Warriors:**



Hope HWH division with its dedicated Health Care Workers led by the Chief Med Supdt and ably supported by the Divisional Railway Manager at every point can win the battle against the Covid Pandemic.

Dr.Subhashish Das, ACMS/HWH

**Sincere Thanks to:**

**ALL THE HEALTH CARE WORKERS WHO ARE FIGHTING THE BATTLE INSPITE OF SOME OF THEM BEING INFECTED**

**DRM/HWH**

**CMS/HWH**

**ADRM/Infra/HWH**

**All the Doctors**